Math 10

Lesson 1–5 Answers

**Lesson Questions**

**Question 1**

The key idea for simplifying radicals is to find the largest common factors of the radicand (the number inside the radical sign) that are perfect squares, perfect cubes, perfect quartics, etc. depending on the index.

For , on the side of the page we write the perfect squares. We note that 25 is a factor of 75.

 

For , on the side of the page we write the perfect powers of 4. (Note that the numbers become very large very quickly, therefore we usually look for factors of small numbers like 2 or 3 that are being raised to the power of 4.) We note that 16 is a factor of 288 and 81 is not a factor of 288.

 

For , on the side of the page we write the perfect cubes. We note that 343 is a factor of 1715.

 

For , there are no perfect square factors of 30, therefore it is already in simplest form.

 

**Question 2**

  

## Nasty question of the day

 Given that  and without using a calculator determine a decimal approximation for each radical.

(a) 

(b) 

(c) 

(d) 

(e) 

(f) 

**Assignment**

1.

a) 

b) 

c) 

d) 

e) 

f) 

g) 

h) 

2.

a) 

b) 

e) 

f) 

3.

d) 

e) 

f) cannot be simplified

g) 

h) cannot be simplied

i) 

4.

a) 

c) 

e) cannot be simplified

g) 

i) 

5.

a) 

c) 

e) 

g) 

i) 

6. ft

7. cm

8.

9.

a) 

c) 

10.

a) 

c) 

11.

 

12.

 

13.

a) c)

14.

4

4

x

y

8

 Find x using Pythagorus Find y using Pythagorus

 



For the x square For the y square

